

---

## Preface

This book is the result of 6 years of collaboration between four scholars from leading universities in Europe and North America. It is based on decades of collective experience in the areas of sustainable development and sustainable transportation, focused on research, teaching, and practice. The book's development was driven by the need for a comprehensive text for students, academics, and practitioners interested in the broad area of sustainable transportation.

The book provides a rich text for advanced undergraduate and graduate students, academics, researchers, and transportation practitioners. It will provide readers with a deep understanding of the basic concepts of sustainability as well as a coherent framework for how to apply the concepts consistently within the context of transportation planning, management, and decision-making.

The book contains 12 chapters and is organized into two main parts connecting theory and methodology to practical examples of sustainable transportation indicator systems followed by our concluding reflections. It is intended to be both a valuable reference on the subject and a source of ideas for how to approach the development of sustainable transportation indicator systems. The book is grounded in the belief that there is no one right way to develop such a system; however, there is a set of ideas and tools that should be applied to ensure that any system developed is informed by sustainability principles, is effective, and is used by all participants and stakeholders.

In the academic realm, the book is designed for use in courses involving the application of sustainability to decision-making in transportation. The structure of the chapters in Part I (Chaps. 2–7) was designed from a pedagogical/learning perspective. Each chapter builds on the previous set of ideas to enable students to develop a broad and interconnected understanding of the material and how it can be applied in a real-world setting. Where relevant, the text provides key terms, important references, and discussion questions to facilitate in-class discussions. The book can also be used in a range of existing courses on transportation planning, policy analysis, or performance management in general.

In the practitioner realm, the book will support planners, managers, consultants, and other professionals who are challenged with transitioning their transportation systems toward sustainability. It offers a frame of reference on what sustainability is and how a measurement system can be developed to make informed decisions. It

provides clear guidance on what we should measure, how we should measure, and what we should report. We have endeavored to make the text accessible, while not undermining the importance of using consistent and accurate terminology throughout. We hope to empower the reader with the correct terminology to facilitate effective communication. The descriptions, examples, and case studies in Part II of the book (Chaps. 8–11) in particular are intended to enable practitioners to develop sustainable transportation performance measurement systems that are well conceived and, hence, valuable to their organization.

In this book, we show that transportation plays a key role in addressing the broader topic of sustainability, while at the same time recognizing that transportation has to become more sustainable to make progress toward sustainable development. The message that there are multiple ways to implement a sustainable transportation performance measurement system may frustrate some who are looking for an “off-the-shelf” answer. Similar to sustainable development, moving toward sustainable transportation is a *process* of change that thrives when supported by a flexible and learning-oriented approach. We hope that the performance measurement frameworks and best practices discussed in this book provide useful starting points for those looking to embark on transforming their transportation systems toward sustainability. We provide our reflections on what we have learnt in the conclusion of the book (Chap. 12). Our intention is to continue developing and sharing ideas through a website associated with the book at <https://sustransindicators.com/> and we would encourage readers to engage with us in this enterprise.

Kgs. Lyngby, Denmark  
Blacksburg, VA  
Leeds, UK  
College Station, TX

Henrik Gudmundsson  
Ralph P. Hall  
Greg Marsden  
Josias Zietsman

Sustainable Transportation

Indicators, Frameworks, and Performance Management

Gudmundsson, H.; Hall, R.P.; Marsden, G.; Zietsman, J.

2016, XIII, 304 p. 54 illus., 13 illus. in color., Hardcover

ISBN: 978-3-662-46923-1